

CLAIMS:

1. An interlocked structure formed from a strip and a strip clamp,
the strip comprising a base having first and second parallel
5 edges extending along said strip and a series of integral reinforcements
upstanding from the base and extending therealong, the first edge has an
interlocking component and the second edge has a second interlocking
component, the first interlocking component being capable of being
interlocked within the second interlocking component to form a joint where at
10 least the first interlocking component has an undercut portion along a side
thereof,
the strip clamp being capable of compressing the joint at least in
the region of said undercut to secure said joint.
- 15 2. The structure of claim 1 wherein the first and second interlocking
components abut one another where each of the first and second interlocking
components have an undercut portion along the side thereof of the joint, the
strip clamp compressing the joint at the opposite undercuts to secure the joint.
- 20 3. The structure of claim 1, wherein the first interlocking component is
capable of interlocking with the second interlocking component to form a joint
where the first interlocking component has an undercut portion along each
side thereof and is captured in the second interlocking component, the strip
clamp being capable of compressing the joint at least along the second
25 interlocking component which captures the undercut to ensure joint seal,
integrity and to reinforce interlocked ribbed structure.
4. The structure of claim 3, wherein the strip clamp is spaced from the
joint to define a cavity along a joint, the cavity being filled with a substantially
30 rigid material to effect the clamping action at least along the second
interlocking component which captures the undercut of the first interlocking
components.
5. The structure of claim 3, wherein the structure is tubular.

6. The structure of claim 5, wherein the strip clamp is inwardly biased to provide said joint compression at said undercut.
7. The structure of claim 5, wherein the clamp comprises a body portion
5 with opposing arms, the opposing arms having ends which compress the joint.
8. The structure of claim 5, wherein the clamp is semi-cylindrical.
9. The structure of claim 5, wherein said reinforcements are ribs
10 upstanding from said base.
10. The structure of claim 9, wherein the clamp, in place, has a height that corresponds to the height of an outer end of at least one rib.
- 15 11. The structure of claim 9, wherein the first interlocking component has a bead and the second interlocking component has a socket, wherein the bead is shaped to be engagingly received within the socket of the second interlocking component.
- 20 12. A tubular structure formed of a helically wound strip joined along its edges and held secure by a strip clamp,
the strip having a male portion along one edge of a base for said strip, such male portion including a web as part of a connection of said portion to said base and having a female portion for capturing said male portion to
25 form a joint, said male portion including an undercut portion, said strip clamp having leg portions for clamping said female portion beneath said male undercut portion.
- 30 13. The tubular structure of claim 12, wherein said strip clamp exerts sufficient compression on said female component to prevent separation of said joint and when said tubular structure is underload, failure occurring first in severing of said web from the base.

14. The tubular structure of claim 12, wherein the male portion is a bead and the female portion is a socket, the bead being shaped to be engagingly received within the socket of the female portion.
- 5 15. The tubular structure of claim 14, wherein the clamp comprises a body portion with opposing arms, the opposing arms each having an end, and at least one end having a clamping portion.
- 10 16. The tubular structure of claim 15, wherein the female interlocking component has at least one channel that engagingly receives the clamping portion.
- 15 17. The tubular structure of claim 16, wherein the second interlocking component has two channels that engagingly receive two opposing clamping portions.
18. The tubular structure of claim 17, wherein the strip clamp is a hollow semi-rectangular parallelepiped.
- 20 19. The tubular structure of claim 14, wherein the base of the strip has integral reinforcement ribs which have an integral flange at their distal end for find a T-shaped supporting structure.
- 25 20. The tubular structure of claim 12, where the helical wound strip is made from an extruded polyolefin selected from the group consisting of polyethylene, polypropylene, polyvinyl chloride and co-polymers of varying densities.
- 30 21. The tubular structure of claim 20, wherein the selected polyolefin includes at least one of glass and carbon fibre reinforcement.
22. The tubular structure of claim 12, wherein the strip clamp is a rigid plastic or of a metal selected from the group consisting of steel, stainless steel, galvanized steel, aluminum and polymer coated steel.

23. The tubular structure of claim 15, wherein each end of the opposing arms has a clamping portion, the clamping portions being biased towards one another to exert a clamping pressure on the female portion of the joint.
- 5 24. The tubular structure of claim 15, wherein the opposing arms are angled inwardly towards each other.
25. The tubular structure of claim 24, wherein the clamping portion at the end of each arm has flat at the end of each arm for engaging the
10 corresponding flat portion on the female portion which is beneath the undercut of the male portion.
26. The tubular structure of claim 25, wherein the flat on each arm is provided by a return on the leg portion.
- 15 27. The tubular structure of claim 15, wherein the opposing arms are angled outwardly from each other.
28. The tubular structure of claim 12, wherein the male portion has a
20 tapered end to provide for point contact within the female portion.
29. The tubular structure of claim 12, wherein the formed tubular structure has a diameter, the diameter varying from a first diameter which is representative of the pipe diameter to a second diameter which is
25 representative of the enlarged bell portion of a bell and spigot connection.
30. The tubular structure of claim 29, wherein the enlarged bell portion of the pipe is severed midway and the small diameter for the pipe is severed midway to provide an individual pipe section.

31. A structural strip for use in forming a tubular structure by helically winding the strip and interconnecting it,

the strip comprising a base having first and second parallel edges extending along the strip and a series of integral reinforcements upstanding
5 from the base and extending therealong;

the first edge having a male portion which includes a web as part of the connection of the male portion to the base and a female portion for capturing the male portion to form a joint;

the male portion including an undercut portion;

10 the female portion capturing the undercut portion of the male portion;
and

the outer surfaces of the female portion having a clamp engaging the surface beneath the undercut of the male portion so that the interconnected joint may be secured by way of the strip clamp.

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32. A concrete composite pipe having a plastic liner comprises a smooth interior surface, as defined by the interior of a tubular structure formed of a helically wound strip joined along its edges and held secure by a strip clamp, the strip having a male portion along one edge of a base for said strip, such
20 male portion including a web as part of a connection of said portion to said base and having a female portion for capturing said male portion to form a joint, said male portion including an undercut portion, said strip clamp having leg portions for clamping said female portion beneath said male undercut portion, the tubular structure being encased in concrete to define the wall

25 thickness of the concrete composite pipe.